

Promoting Innovative Environmental Technologies

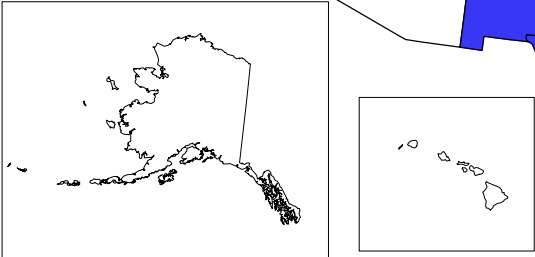


Purpose of ITRC

ITRC is a state-led, national coalition of regulators working with industry and stakeholders to:

- improve state permitting processes and
- speed deployment of technologies through interstate and regulatory collaboration.





Other Participants

- Industry representatives

- Public Stakeholders

- Federal agencies



DOE



EPA



DOD

- Host organization



Environmental
Council of States

- State organizations



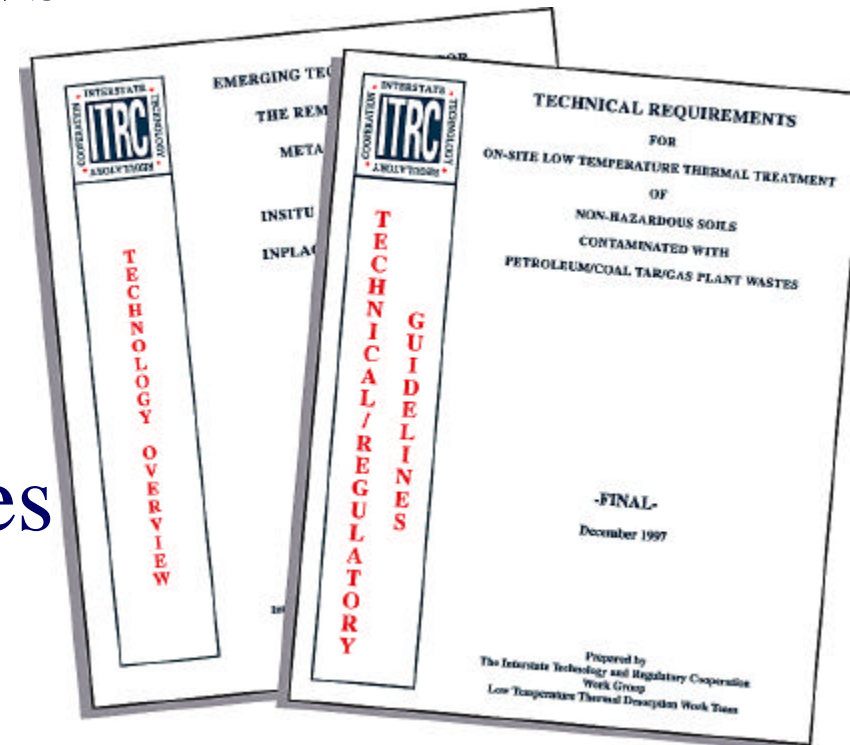
Western Governors'
Association



Southern States
Energy Board

Products & Services

- Regulatory and Technical Guidelines
- Technology Overviews
- Case Studies
- Training Courses
- Peer Exchange
- Technology Advocates



Document Contents

- Site Characterization
 - Pre-Treatment Sampling
 - Site Modeling
 - Exposure Analysis
 - Historical Data about Site Use
 - Data Requirements
 - Analytical Methods
 - QA/QC
- Performance Data
 - Treatability Studies
 - Test & Demonstration
 - Monitoring for Treatment Goal and Fugitive Emissions
 - System Operating Requirements
 - Health & Safety Requirements
 - Feed Limitations
- Clean-Up Levels
 - Closure Criteria
 - Intended Use
 - Receptors
 - Surrounding Community

Benefits to States

- Access to peers & experts in other regulatory agencies
- Shortened learning curve by obtaining advance knowledge of new and used technologies
- Cost-effective involvement in demonstrations conducted in other jurisdictions
- Sounding board for problem solving
- Information and technology transfer
- Maximize limited resources
- Personal & professional development

Benefits to Industry

- Forum conducive to advancing technology & solutions
- Insight into the regulatory world
- Access to multiple state entities
- Opportunity for broader review of technology
- Unique & cost-effective approach to demonstration & deployment of new technology
- Mechanism to identify and integrate regulatory performance expectations amongst states



Benefits to DOD



- Facilitates interactions between DOD managers and state regulators
- Increases consistency of regulatory requirements for similar sites in different states
- Can help reduce uncertainties when preparing cleanup plans
- Addresses contaminants of concern to DOD (heavy metals, VOCs, PAHs, organic pesticides, solvents, etc.)
- One technical team is dedicated to UXO, a problem unique to DOD



Benefits to DOE



- Facilitates interactions between DOE managers and state regulators.
- Increases consistency of regulatory requirements for similar cleanup problems in different states.
- Can help reduce uncertainties when preparing cleanup plans.
- Addresses DOE's remediation needs (metals, organics, asbestos, mixed waste).
- One technical team, Radionuclides, is dedicated to a problem of particular concern to DOE.



Benefits to USEPA



- Forum to facilitate idea sharing between regulators at the federal and state levels.
- Unique & cost-effective approach to demonstration & deployment of new technology.
- Mechanism to identify and integrate regulatory performance expectations amongst states.

State Engagement – POCs

- Serve as liaisons between states and ITRC
- Help gain state concurrence on documents
- Encourage use of ITRC products/services
- Document use of ITRC documents (38 examples to date)
- Record institutional changes resulting from ITRC (46 examples to date)

Technical Teams

- Accelerated Site Characterization
 - Enhanced In Situ Bioremediation
 - Low Temperature Thermal Desorption
 - Metals in Soils
 - Permeable Reactive Barriers
 - Plasma Technologies
 - Verification
- NEW in 1999:**
- Dense Nonaqueous Phase Liquids
 - Enhanced In Situ Bionitrification
 - Phytoremediation
 - Radionuclides
 - Unexploded Ordnance

Accelerated Site Characterization

Value: Offers the potential to reduce the time and costs of characterizing a site before a cleanup plan is chosen

Products: 2 Technology Overviews
2 Guidelines on technical requirements for
- SCAPS - LIF
- SCAPS - VOCs

Status: Closed out in 1998

Success: Document helped TX use SCAPS-LIF at an EPA Superfund creosote site

Enhanced In Situ Bioremediation

- Value:* Usually less expensive and more acceptable than aboveground options
- Products:* 4 Guidelines including *Natural Attenuation of Chlorinated Solvents in Groundwater - Principles and Practices*.
Technology Overview
Case Study
Offered natural attenuation courses in 1998
- Status:* Team conducting training as requested
- Success:* Courses reached more than 900 regulators and 500 consultants

Low Temperature Thermal Desorption

Value: Removes hazardous solvents from mixed waste, reducing waste volume and lowering disposal costs

Products: 3 Guidelines on technical requirements for

- petroleum/coal tar/gas plant wastes
- chlorinated organics
- mixed waste and/or mercury

Status: Team closed out in 1998

Success: Contributed to \$100/ton savings for treatment in NY

Metals in Soils

Value: Treatment could help avoid costly excavation, transportation, disposal at waste facility, capping, and monitoring

Products: Overviews of three emerging technologies
- phytoremediation
- electrokinetics
- in situ stabilization
Guideline issued in 1997; updated in 1999

Status: Focusing on phytoremediation

Success: Facilitated community acceptance of soil washing and phytoremediation at Ft. Dix, NJ

Permeable Reactive Barriers

Value: Offers potential to restore many types of sites to the standards that can't be met by conventional groundwater treatments

Products: 3 documents on remediation with PRBs
- regulatory guidance for (1) chlorinated solvents and (2) inorganics and radionuclides
- design guidance for chlorinated solvents

Status: Offering training courses in 1999 and 2000

Success: Process—from design through installation — took less than four months in NJ

Plasma Technologies

Value: Thermal treatments that have potential to treat hazardous, radioactive, military, and medical wastes

Product: Technology Overview

Status: Team closed out in 1998

Verification

- Value/ Success:* Technology verification programs are incorporating state verification needs into their programs, making it easier for states to approve technologies
- Product:* A matrix of data provided by 16 states on the elements necessary in a verification program to increase knowledge and evaluate confidence in the verified technology
- Status:* Accumulating examples of verification being used to improve technology deployment

Dense Nonaqueous Phase Liquids

Value: If not removed, DNAPLs could contaminate groundwater for centuries

Planned Product: An overview of technologies capable of characterizing and treating DNAPLs

Partner: USEPA's Superfund Innovative Technology Evaluation (SITE) program

Status: New team in 1999

Enhanced In Situ Biotenitrification

Value: May be used to treat contamination caused by nitrogen fertilization, concentrated animal feeding operations, explosives manufacture, wastewater treatment, and UXO

*Planned
Product:* A technology overview

Status: New team in 1999

Phytoremediation

- Value:* Offered commercially, but many details still need to be studied to explain the process and guarantee reliability
- Planned Product:* A decision tree to help determine when phytoremediation is appropriate
- Status:* New team in 1999

Radionuclides

Value: A concern particularly at DOE sites as a result of nuclear weapons production

Planned Products: A catalog of state, federal, and international radionuclide organizations and their activities
A glossary of radionuclide terms

Status: New team in 1999

Unexploded Ordnance

Value: Examining the problem of military munitions contaminating federal (DOD) and private sites

Planned Product: Case studies examining ways to remove barriers to using innovative UXO remediation technologies

Status: New team in 1999

Contacts

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